

## *A History of NORANDA MINING OPERATIONS IN LATIN AMERICA*

### NICARAGUA

Donald N. Spencer (1898-1970) was a young American mining engineer who went to Central America in 1925. He worked for the Guatemala Gold Dredging Co. in which a Noranda Mines director, Irving W. Bonbright (1872-1941) of New York, was the principal shareholder. Bonbright was very pleased with Spencer's work as Manager of the placer operation. After the price of gold was increased from \$20.67 U.S. to \$35 per oz in 1934, Spencer decided to prospect for lode gold deposits in Nicaragua and was generously grub-staked by Bonbright.

Spencer staked some mining claims and obtained water concessions in the Santa Rosa district of the Province of Leon, Nicaragua in 1935 and 1936. The assay results were excellent, but Bonbright felt that the inaccessibility of the property would add to costs and require more financing than he and his associates would care to assume. By 1937, he had already invested some \$100,000 in Spencer's Nicaraguan company, Compania Minera La India.

#### COMPANIA MINERA LA INDIA

Bonbright, who was one of the original Directors of Noranda, offered a controlling participation in the project to James Y. Murdoch (1890-1962), the President of Noranda. The Noranda Directors agreed in December 1937 to invest \$332,000 U.S., including a \$306,000 loan at 6% for a 63.75% interest in the Nicaraguan company.

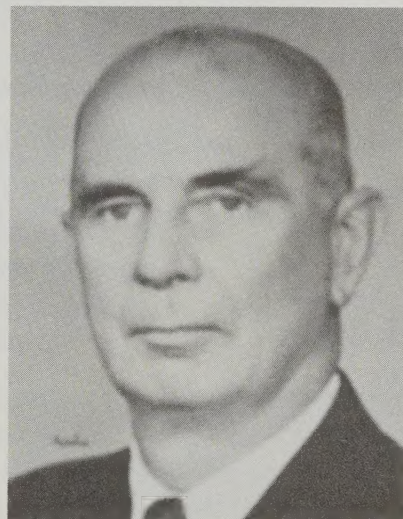
The Officers of LA INDIA were:

J. Y. Murdoch	— President
I. W. Bonbright	— Vice President
D. N. Spencer	— Vice President & General Manager
Oliver Hall (1880-1954)	— Consulting Engineer of Noranda
C. H. Windeler (1900-1977)	— Secretary of Noranda

Spencer purchased for LA INDIA the adjoining 12 mining claims of Minas de Agua Caliente for 20,000 cordobas (\$7,200) and took an option on the neighbouring Dos Hermanos property for \$18,000. This option was exercised in 1939. From the start, Noranda's policy was to provide technical and operating assistance to Spencer, who exercised almost complete autonomy.

The LA INDIA mine went into production in May 1938 with a 100 ton mill and three years' ore reserves

averaging 0.32 oz gold per ton. The net profit that year was approximately \$140,000. Spencer installed another ball mill and thickener trays to increase the mill capacity to 285 tons per day. Earnings the following year amounted to \$600,000 and Noranda's \$306,000 loan was repaid. In 1940, La India earned \$610,000 and paid dividends of \$20 per share on the 10,000 shares outstanding.



DONALD N. SPENCER

#### EMPRESA MINERA DE NICARAGUA (EMDEN)

Spencer then found another interesting gold prospect near El Limon, about 45 kilometers west of LA INDIA, and obtained a 17 square kilometers mining concession covering this ground. After spending \$317,000 he developed a 300,000 ton orebody averaging 0.3 oz gold per ton. He set up a subsidiary company, Empresa Minera de Nicaragua, with the same Board of Directors, to hold this property. It was similarly capitalized with 10,000 shares at \$4 per share plus \$730,000 in 6% certificates of indebtedness. This permitted Spencer to subscribe personally for shares in EMDEN. A shaft was sunk and a 200 ton mill was put into production at El Limon in June 1941. The mine earned \$400,000 in 1942. The rate of exchange was then 5 cordobas per \$1 U.S.

Another prospect was discovered not far east of El Limon and EMDEN acquired the Santa Pancha concession which was about 18 kilometers square. Four orebodies: the Santa Pancha, San Luis, Mercedes and Panteon were ultimately developed there. Nine shafts were sunk in order to minimize drifting and cross-



cutting and so control the flow of hot water in the workings. An option on the nearby La Esmeralda property was abandoned after spending \$100,000.

Irving Bonbright died in 1941 and his son, Wayland, replaced him as Vice President. Fern C. Kettel (1914-), an American mining engineer from New Mexico who had gone to work at another mine in Nicaragua in 1938, joined Spencer as his assistant in 1941.

World War II had little effect on conditions in the country until 1942 when it became difficult to obtain supplies to maintain both mining operations. LA INDIA's ore reserves were then estimated at 325,000 tons averaging \$11.50 gold per ton and EMDEN's reserves were similar with 300,000 tons and a grade of \$11 per ton.

In 1943 Wayland Bonbright enlisted in the U.S. Army and was succeeded on the Board by H. R. Norsworthy representing the Bonbright Estate. Carlos Almazan (1918-), a Mexican mining engineer from the New Mexico School of Mines, U.S.A., was employed at El Limon in 1943.

The Directors of both La India and Emden were:

J. Y. Murdoch	— President, Toronto
H. R. Norsworthy	— Vice President, New York
D. N. Spencer	— Vice President & General Manager, Managua
F. C. Kettel	— Manager, Managua
C. H. Windeler	— Secretary, Toronto
Albertina McGregor	— Managua

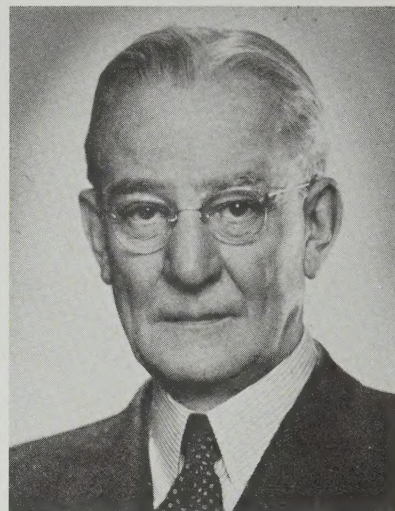


**IRVING W. BONBRIGHT**

### LA INDIA Ore Reserves

LA INDIA earned \$490,000 in 1943 and \$336,000 in 1944 while EMDEN earned \$237,000 and \$367,000 which was applied against its indebtedness. The following year LA INDIA's earnings were only \$195,000 while the subsidiary suffered a loss of \$80,000 due to increasing costs and the war-time difficulty of obtaining equipment and supplies. LA INDIA's average grade of ore fell off 20%, costs increased due to the greater inflow of water, and development work was hampered by lack of pumping capacity. It became

evident that the ore, which had been regular and continuous on the upper levels, began to finger out at depth.



**JAMES Y. MURDOCH**

EMDEN earned only \$7,500 in 1946 and LA INDIA's profit was \$194,000. However, EMDEN's profit in 1947 was \$550,000 and it paid its initial dividend of \$95,000. This increased the parent company's net profit to \$324,000 U.S.

The average price for gold sold by the two mines in 1947 was \$41.50 U.S per oz and \$43.50 in 1948. The price of silver was about 73¢ per oz. LA INDIA earned \$499,000 in 1948 of which 85% came from EMDEN. In 1949, EMDEN earned \$300,000 and paid it all out as dividends. The rate of exchange then was 6.6 cordobas per \$1 U.S.

In October 1950, a sudden local cloudburst caused a surface flood disaster which took the lives of 37 people including five employees and caused \$350,000 damage to LA INDIA buildings and equipment.

The average price for the 47,500 ozs of gold produced in 1950 was \$38.65 and EMDEN's earnings were \$367,000 which it again passed on in dividends to the parent company. In 1951, some 52,000 ozs were sold at \$35 plus 10,000 ozs of silver at 86¢. This was LA INDIA's big year with a net profit of \$940,000, including dividends of \$617,000 from EMDEN, from which were paid dividends of \$440,000. The cost per ton of ore processed averaged \$8.90. Ore became scarce and costs per ton rose to \$10.75 in 1952, but LA INDIA showed a profit of \$819,000 and paid its maximum dividend of \$750,000.

### LA INDIA Ore Exhausted

Emden's corporate year end was changed from December 31 to June 30 in 1953. It paid no dividends that year and the parent company earned only \$84,000. LA INDIA's reserves continued to drop until the mine was completely exhausted in mid-1955. Donald Spencer resigned that September after 21 years' service and Fern Kettel succeeded him as General Manager.

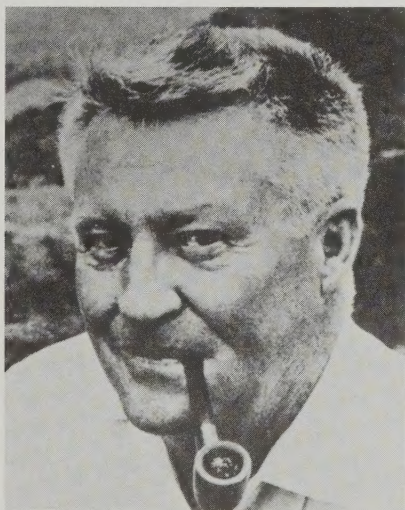


Operations continued at El Limon where mill heads decreased from 0.44 oz to 0.41 oz while a grade of 0.32 oz became necessary to cover costs. In 1956, Kettel disposed of a property called El Crucero and wrote off some \$500,000. At a Directors' meeting in Toronto in 1956, John Bradfield (1899-), President of Noranda, and Richard Porritt (1901-), General Manager of Noranda, were added to both Boards. It was decided to wind up LA INDIA and liquidate its assets, which was done late in 1957.

During its 17 years of operation, from May 1938 to June 1955, LA INDIA had mined some 1.7 million tons of 0.39 oz ore. It recovered 576,000 ozs of gold, earned \$8.91 million and paid \$5.38 million in dividends from which Noranda received \$3.43 million. Upon liquidation, it distributed a further \$2.85 million to shareholders making a total distribution of \$8.23 million. Of this it had received one half, or \$4.1 million in dividends from EMDEN. Upon this liquidation Noranda's interest in EMDEN became 61%.

With LA INDIA wound up, the El Limon mill was treating over 10,000 tons per month from which it recovered about 5,000 ozs of bullion. This was worth some \$2.1 million per year which yielded a net annual profit of about \$300,000.

The mining concession agreement held by EMDEN expired in 1960 and it became necessary to set up a new Nicaraguan company to hold the concession and take over the operation. Accordingly, Empresa Minera de El Setentrion was formed and its shares exchanged for shares of EMDEN. J. Y. Murdoch retired after 23 years, as the original President of the Nicaraguan companies and was succeeded by R. V. Porritt, the Executive Vice President of Noranda.

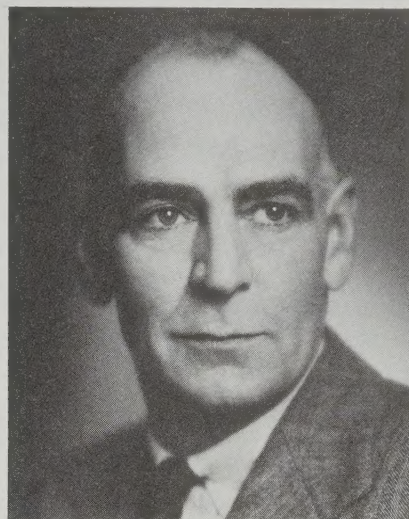


**FERN C. KETTEL**

#### **EMPRESA MINERA DE EL SETENTRION (MINSET)**

In the fiscal year ended June 30, 1960, 119,000 tons of 0.52 oz ore were mined and treated at El Limon to produce 60,000 ozs gold and 78,000 ozs of silver with a net profit of \$280,000. Ore reserves amounted to only 220,000 tons and a grade of 0.47 oz per ton was considered necessary to cover costs. Some 65,000 ozs were recovered the following year and 73,000 ozs in 1962. From the outset, Spencer had sent all gold bullion to the United States for the recovery of fine

gold and silver, but in 1963 better terms were obtained from Noranda's Canadian Copper Refiners at Montreal and subsequent production was shipped there.



**R. V. PORRITT**

In 1963, MINSET mined and treated 345 tons of ore per day and recovered 54,000 ozs of gold. Development work was principally in the Mercedes orebody. At this point, the company had to build a 21 kilometer road from the mine to the government highway going to the port of Corinto on the Pacific.

#### **The Panteon Vein**

This vein developed in 1964, extended over 1,600 ft and had an average width of about 6 ft. It dipped steeply at 85° and its grade was estimated at 0.56 oz per ton. The No. 6 shaft was sunk 500 ft on the Panteon vein and drifting on the 400 ft level intersected 1.2 oz ore over a 5 ft width. The drift also encountered 145°F water flowing at some 200 gallons per minute.

The Panteon ore improved the average grade of mill heads in 1966 but the very hot, volcanic source water necessitated a drainage level in the dry footwall. The rainfall in 1966 amounted to 90 inches. Some 650 gallons per minute had to be pumped up the No. 6 shaft while the ore was hoisted up a new No. 7 shaft. The ore reserves at the end of 1966 were estimated at 570,000 tons and the grade remained at 0.56 oz.

In 1968, 127,000 tons were treated at the El Limon mill averaging 0.54 oz per ton and 62,000 ozs were recovered plus 65,000 ozs of silver. The average price received for gold was \$39.90 U.S. Half of the tonnage was coming from the Panteon vein, but mining and development work on this vein had become very expensive.

The Noranda Mines Annual Report for the calendar year 1970 stated that:

"The Nicaraguan mine treated 114,000 tons of ore averaging 0.62 oz gold per ton as compared to 121,750 tons and 0.49 oz grade in 1969. Proven ore reserves increased 125% to 205,000 tons averaging 0.54 oz gold per ton. A difficult project was accomplished in driving a drainage level at 700 ft depth and lowering the hot water table to enable development and mining on the 600 ft level in the Panteon vein. Work is under way to establish drainage at 900 ft depth which, if



successful, should make available nearly all of the ore presently indicated in the Panteon vein."

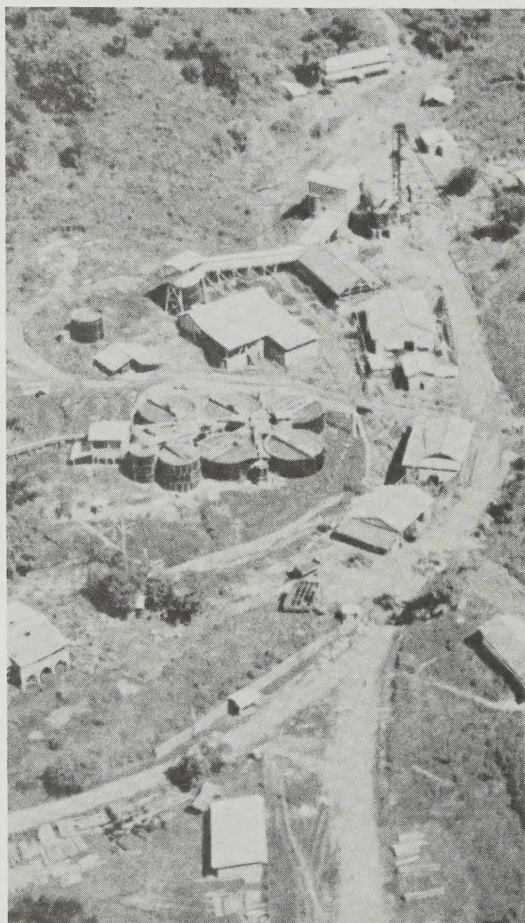
Hot water continued to be the main problem and sinking the No. 7 shaft below the 800 ft level was difficult and expensive.

In the decade 1960-70 the El Limon mill treated an average of 121,300 tons per year to produce 60,000 ozs of gold for an average annual profit of \$357,000.

### Exploration

From the outset, Spencer had conducted widespread, careful exploration work which resulted in finding the El Limon mines. This had been continued by Kettel, so that a very thorough coverage of the country had been carried out. A program of outside exploration was undertaken in 1970 in Honduras and Costa Rica as well as in Northwest Nicaragua. The Setentrion concession itself expired in 1971 and the mine adapted to and operated under a general mining code which Nicaragua had developed. Some 118,000 tons were treated in 1972 with heads averaging 0.70 oz per ton and 77,500 ozs were recovered. This was the top performance. Dividends of \$1.4 million were paid in 1972. Ore reserves then totalled 254,000 tons of 0.68 oz grade.

Kettel took an option on an 85% interest in a copper-zinc prospect in Honduras called "Quita Gana." This orebody was later estimated by MINSET geologist, J. W. Carter, to contain about 1.3 million tons averaging 4.9% zinc and 2.5% copper. The deposit was interesting but the prevailing taxes in Honduras made it unviable.



EMDEN — 1947

### Managua Earthquake

In December 1972, a severe earthquake practically destroyed the city of Managua with severe loss of life. The company's head office was almost destroyed and temporary quarters were set up in the city of Leon, about 90 kilometers west of Managua. MINSET promptly made a contribution to the National Disaster Fund. Following the earthquake, the export tax was raised from 5% to 10% on the gross value of production. The price of diesel oil increased from 14.8¢ to 48¢ per gallon — a serious factor in pumping large volumes of water.

### Price of Gold

Gold was \$65 per oz at the end of 1972, rose to \$127 in July 1973 and closed that year at \$112. The net profit for these two years was \$854,000 and \$2.96 million. The tons mined in 1973 totalled 119,500 of 0.63 oz grade, from which 75,800 ozs were recovered. The Panteon vein accounted for two-thirds of this production.

The No. 6 shaft was deepened in 1974 to 1070 ft where a flow of 1500 g.p.m. of hot water was encountered. A ventilation raise was put up from the 400 ft level to surface and work started on sinking No. 8 shaft, the third on the Panteon vein. Large drill holes helped provide drainage for the flow of hot water. Some \$300,000 was spent on new equipment at the mine and in the mill.

In 1974, 127,700 tons of 0.5 oz grade ore were mined and the net profit was \$3.2 million. The price of gold averaged about \$150 per oz, but was erratic due to speculation as to the possible effect of the U.S. Government permitting ownership of gold by U.S. citizens. In 1975, mining 129,900 tons of 0.5 oz ore produced 59,400 ozs of gold. Even though the price of gold fell from a high of \$185 in January to \$140 per oz at the year end, record earnings of \$3.9 million were achieved.

In 1975, Porritt retired after 15 years' service and Dr. Wm. James, Executive Vice President of Noranda succeeded him. A severe loss was suffered in the death of Marco Benavente, Chief Accountant at Managua for many years. In his annual report, Kettel expressed appreciation in regard to: Edward Hagie, General Superintendent, Ron Bailey, Assistant Superintendent, and Fatima Cordero, Office Manager.

### Nicaraguan Politics

Back in 1911, a Nicaraguan treaty gave the United States the right to build a canal between the Atlantic and Pacific oceans, utilizing the San Juan River on the border with Costa Rica. In 1927, a Nicaraguan general by the name of A. C. Sandino, fought the U.S. Marines who had been trying to bring peace to the troubled country. Sandino was killed in 1934 by General Anastasio Somoza, who had been left in charge of the National Guard when the Marines departed. Somoza became President of Nicaragua in 1934 and served two terms of six and seven years which expired in 1947. He then overthrew President Sacasa half way through the latter's term and became President again



in 1950. However, in 1956, near the end of his third term, he was assassinated and his son, Luis Somoza, succeeded him. While reputed to be an autocratic dictator, the father had established and maintained stability in Nicaragua for the first time in 100 years.

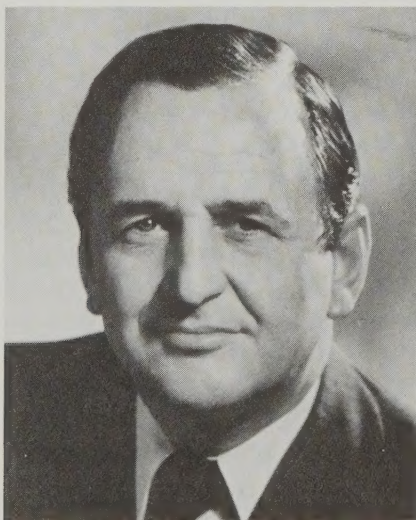
Luis Somoza was President from 1956 to 1963 when René Schick took office and presided until his death in 1966. Somoza's younger son, Anastasio Jr (brother of Luis) was elected President in February 1967 with a big majority. When his term expired in 1974, he was re-elected. However, the people, including many businessmen, did not relish the prospect of six more years of despotic rule by the Somoza family.

On December 27, 1974, in a well organized revolt, 13 politicians, including some of Somoza's relatives, were kidnapped. The revolutionists proclaimed themselves followers of Sandino, who had been killed in 1934 by the National Guard led by Somoza's father, and adopted the name "Sandinistas". As a result of the kidnapping, the revolutionaries were reportedly paid a \$1 million ransom and 14 political prisoners were released to join them on their flight to Cuba. In January, 1975, Somoza imposed martial law and strengthened his National Guard, but the U.S. Government, which had previously supported the Somozas, withdrew its aid.

Early in 1976, a group of Nicaraguan congressmen visited MINSET's El Limon property along with the government Mine Inspector. They had been advised by foreign church and other outside sources that inhumane conditions pertained at the mine, but found that this was not true. However, the outsiders had done their work and the union called a short strike of two weeks' duration at the property.

### Terminal Operations

The control of extremely hot water from underground streams continued to be the major operating problem. In 1976 a major inflow from a previously unknown source, at 169°F, blocked access to higher grade ore. Another shaft was started to reach this section of the Panteon vein.



**WILLIAM JAMES**

Earnings for 1976 dropped from the 1975 record of \$3.9 million to \$1.6 million. The tonnage was down

20%, grade fell from 0.5 oz to 0.44 oz and the price of gold declined from \$140 per oz in January to \$103 in August, but recovered to \$134 in December. Ore reserves at the end of 1976 were 177,000 tons averaging 0.45 oz per ton.

In 1977, 131,500 tons of 0.37 oz ore, mostly from the Panteon vein, were treated yielding 44,800 ozs gold and earnings of \$1.3 million. Kettel always emphasized the need for safety, both underground and on surface. Hot water flows under pressure constituted a special threat in these mines and necessitated special precautions. Nevertheless, late that year, a sudden high pressure flood of hot water occurred on the 600-ft level. One miner was killed and that whole section of the mine was lost with all equipment.

In 1978, 132,000 tons of 0.32 oz ore were treated and 37,000 ozs recovered yielding earnings of \$1.8 million due to the increased price of gold. Some 3000 g.p.m. of hot water was being pumped from the mine.

The Directors and Officers of MINSET were:

William James	— President, Toronto
Fern C. Kettel	— Vice President & General Manager, Managua
Albertina McGregor	— Managua
Emilio Zarrok	— Managua
J. O. Hinds (1929-)	— Vice President, Toronto
E. K. Cork (1932-)	— Treasurer & Assistant Secretary, Toronto
L. J. Taylor (1936-)	— Secretary & Assistant Treasurer, Toronto
D. N. Spencer, Jr.	— California
T. I. Duncan	— New York, Bonbright Estate

### The Revolution

A general strike paralysed most of the country for two weeks early in 1978. This was followed by sporadic demonstrations against the Somoza government. In August, several members of the MINSET staff resigned and left the country before the conditions worsened. The U.S. Government suggested that Somoza call a multi-party election, but the General undertook to resign only when his term expired in 1981. In March and April 1979, the mine continued to operate and the monthly tonnage was 9,300 tons of 0.29 oz ore yielding 2,400 ozs gold.

The revolutionists became identified with communist Cuba and attacked all foreigners and looted their homes and assets with the same violence as applied against Somoza and his National Guard. Out of 800 employees, there were only two technical foreign staff members at the mine: Ron Bailey, the Assistant Superintendent and Hilbert Shields, the Resident Geologist.

Due to destruction by the 'liberators', all insurance companies cancelled coverage in January 1979. An attempt was made to burn the company's airplane hangar at El Limon and anti-American hate leaflets were distributed to employees and their families. The U.S. Government withdrew all diplomatic contact with Nicaragua.



The U.S. exchange rate for cordobas (formerly 7 to 1) became 10 to 1. The cost of diesel fuel was up a further 50% and terrorism became rampant. Some miners, however, wanted to work and Ron Bailey tried to continue to pay and feed them and their families. The Sandinistas accused Kettel and Noranda of supporting Somoza, which was not the case. Kettel was only pursuing Noranda's policy of abiding by the laws of any country in which they were operating. This was interpreted as endorsement of the policies of the Somoza regime.

On June 22, 1979, the property, including some 1,000 ozs of gold and cash in the vault, was confiscated by heavily armed Sandinistas. A further 1,340 ozs of gold, which was awaiting shipment, was taken from the Managua office. The mine was bombed and a guard killed. Bailey and Shields were seized but they later narrowly escaped into Honduras. Kettel's home and personal property at Managua were also seized and to date there has been no indication of compensation. All foreign investments were treated as if they belonged to Somoza, who finally resigned on July 17th.

As a result of the seizure of the mine and gold production, Noranda had to write off \$2.5 million. The shareholders received an interim liquidation dividend

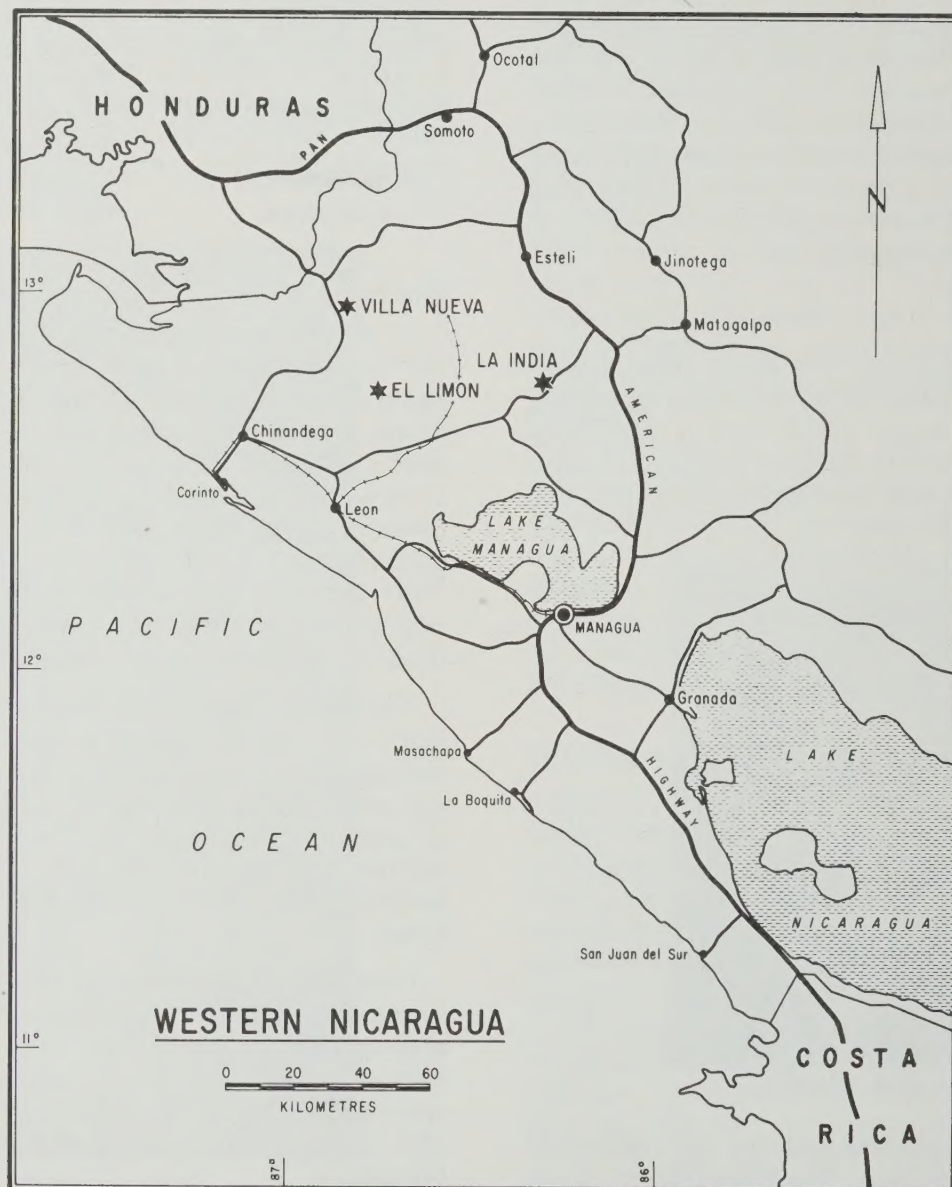
in February, 1980 and will share in compensation, if realized. At time of writing, there has been no official word from the new government as to its intentions.

The Sandinista government will have difficulty operating the El Limon mine and mill unless additional ore is discovered. A gold price of \$600 may also be necessary for profitable operations. Had the Sandinistas left the company alone, the country would have enjoyed the continuing employment for 800 persons and the taxes which had been paid for many years.

The new Nicaraguan regime was recognized by U.S.A. and Canada on July 24, 1979, but no direct diplomatic relations have yet been established between Canada and Nicaragua.

### Economic Summary

From the beginning of the El Limon operations in June 1941, to June 1978, 4.1 million tons of ore were treated to produce 2,025,000 ozs of gold, some \$21.9 million was earned and \$19.7 million was paid out in dividends. The total performance of Noranda's mining operations in Nicaragua resulted in mining 5.9 million tons of ore from which was produced 2,626,000 ozs of gold. The total dividends, plus liquidation payments, amounted to some \$40 million U.S.





# CHILE

In 1959, Fern Kettel on behalf of Empresa Minera de Nicaragua (EMDEN), paid \$10,000 U.S. for a one year option on the Paposa mine, an oxidized copper deposit in Northern Chile. The property consisted of 163 claims totalling 8.15 square kilometers. The deposit had been worked and cobbled off and on by several small operators since 1870. It was located not far from the village of Paposa, in the Atacama desert, 125 miles south of Antafagasta and 15 miles from the Pacific Ocean. After spending some \$200,000 and proving up 3.6 million tons of 2.9% ore, Empresa Minera de El Setentrion (successor to EMDEN) and Noranda Mines acquired the property in 1961. Melvin Morrison was EMDEN's exploration engineer in Chile.

## CHILE CANADIAN MINES, S.A.

This Panamanian company was formed to acquire the mine in 1961. Setentrion's (or MINSET's) interest was 63% with Noranda holding the balance. It was capitalized at \$400,000 U.S. Additional funds would be borrowed from the participants. The Chilean Government which finally approved the venture in July, 1962, was told that once the risk capital invested had been recovered, 50% of the shares would be offered at realistic terms to Chileans.

It was an open pit operation with a sulphuric acid leaching plant using scrap iron to precipitate the dissolved copper. The only water available for the leaching operation was sea water which had to be pumped through 16.5 miles of 6" wrought iron pipe. Work was held up by the government, but permitted to resume in Aug. 1962 at which time material and equipment orders were reactivated.

The Directors and Officers were:

R. V. Porritt	— President, Toronto
W. S. Row (1904-)	— Toronto
F. C. Kettel	— Vice President, Managua
Algirdas Kaunas	— Manager, Antafagasta
Mario Diez	— Santiago
C. H. Windeler	— Secretary, Toronto

## Production

Ali Kaunas who had worked at Timmins, Ontario and had been Mine Superintendent at El Limon, Nicaragua, put the new mine into production in February 1964 at 500 tons per day. Full production was not achieved until October due to problems of corrosion and grade of product. The cost was \$4.9 million U.S. The exchange rate was 2.2 escudos per \$1. The copper in concentrate (or "cement") was then worth about 23¢ per lb fob Chilean port.

Almost from the start, there was difficulty in regard to exchange, customs duties, governmental red tape, delays, tax changes and general instability. However, in 1964, 3080 metric tons of copper in concentrate were shipped to Japan. In 1965, 230,000 tons of ore

produced 6257 tons of cement copper concentrate containing about 4000 tons of metal. There was a 45 day strike in 1966 and only 159,000 tons treated to produce 2800 tons of copper. In 1967, some 3,500 tons of copper were recovered from 200,000 tons of 2% copper oxide ore. Some 239,000 tons averaging 1.76% copper were leached in 1968 to recover 3500 tons of metal.

Ore development was disappointing and reserves were not expected to last beyond 1969. Ore treated in 1969, including 100,000 tons of custom ore, amounted to 233,700 tons averaging 2.5% copper which produced 3740 tons of metal. The grade of residual ore reserves however had fallen to 1% copper. Some 43,700 tons of custom ore raised the tons treated to 266,000 in 1970 with an average grade of 1.8%. This produced 3650 tons of metal, resulting in a net profit of \$797,000. The price of copper was 60¢ U.S. per lb at the start of the year but fell off to 53¢ in December. Out of an investment of \$5.5 million, only \$2.36 million had by then been recovered. The grade of ore reserves was low and at 58¢ per lb, the operation was marginal. Some 202,000 tons of ore were treated in 1971, including 70,000 tons of custom ore producing 2050 tons of metal. So in 8 years 1.42 million tons of ore plus 113,700 tons of custom ore produced 26,320 tons of copper.





## Chilean Politics

By mid-1971, about a year after President Allende came to power, with copper at 51¢, the export of copper cement was prohibited. At the same time, the government-owned smelters raised their treatment charges and imposed discriminatory exchange requirements. The mine thus became completely unprofitable and had to be closed. Then the Allende government confiscated the mine and facilities without compensation. MINSET and Noranda had recovered only \$4.1 million of capital against the \$5.5 million invested. The Allende government also expropriated in 1971, without compensation, the large copper mines which had been developed and operated by U.S. companies Anaconda and Kennecott.

In 1974, the Chilean military junta that had turfed out the Marxist government returned the mine and leach plant to Chile Canadian Mines in order to provide employment in the area. Noranda advanced about \$600,000 and held 49% of the shares, with Kaunas and other Chilean residents holding 51%.

However, the price of copper fell from a high of \$1.50 in April, to 53¢ in January 1975. The mine operated at a small loss in 1976 producing about 1800 tons of metal. The London Metal Exchange price for copper rose to 70¢ per lb but then fell off to 57¢ at the year end. The times and conditions were still not propitious and the mine had to be closed again on June 30, 1977.

The Chilean people put up with Allende's communist regime from mid-1970 to September 1973 when the armed forces took over to save this previously democratic country and themselves. Since then, Chile has struggled to restore its economy. Consistent progress has been made, but the Allende defeat was the first time a communist regime had failed to hold. This could put wrong ideas in the minds of Soviet satellites, so a world-wide campaign was directed against Chile and still persists. The military junta explain that they will hold a two or more party democratic election when political leaders and their parties are reorganized. World-wide Marxists, however, will still be operating.

# MEXICO

## Cia Minera Las Cuevas, S.A.

This Mexican company was formed in 1955 to hold and promote a mining property of some 3500 acres, located 260 miles northwest of Mexico City and 40 miles east of the old town of San Luis Potosi. The prospect was a small deposit of good grade fluorspar in a semi-arid mountainous area at an elevation of 6160 ft. A small open pit mining operation began in 1955.

In 1957, H. L. Roscoe (1885-1962), Vice President of Noranda Mines, became interested in this prospect. He asked a Canadian consulting geologist, M. H. Frohberg, to examine the property in 1958. He reported the fluorspar as a pipe-shaped replacement deposit in limestone and rhyolite breccia. The grade of the fluorite, after crushing and screening out the finer material, was better than 72.5% effective units of  $\text{CaF}_2$ .

## Empresa Fluorspar Mines Limited

Roscoe then set up this Ontario company to acquire the mine through purchase of the shares of Cia Minera Las Cuevas.

Noranda's subsidiary gold mine, Empresa Minera de Nicaragua (EMDEN) subscribed \$400,000 for a 24.4% interest in Empresa Fluorspar and a Canadian subsidiary of Noranda, Waite Amulet Mines, took a similar participation. Waite Amulet was facing depleted ore reserves at its copper-zinc mine in Quebec and was looking for mining investments. Its Manager, Thomas E. Little (1903-1977), visited the property and approved the investment, as did Fern Kettel and Carlos Almazan of EMDEN. The various vendors received 25% of the Empresa Fluorspar shares. Three other Canadian mining companies subscribed for the

balance. The subscribers also purchased preferred shares in proportion to common shares.



H. L. ROSCOE

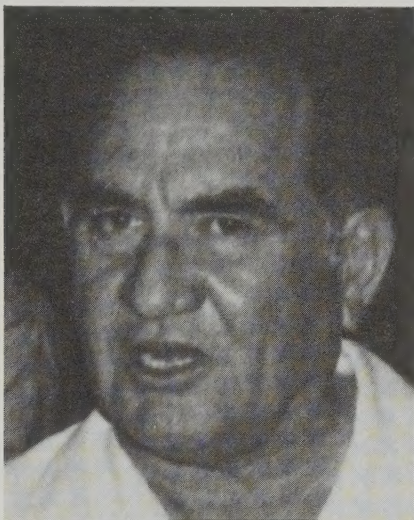
The original Officers and Directors of Empresa Fluorspar Mines were all Canadians:

H. L. Roscoe	— President
J. C. Perry	— Vice President
R. V. Porritt	— representing EMDEN
T. E. Little	— Waite Amulet
J. H. Stovel	— Noranda

In 1959 Roscoe resigned and was succeeded by Porritt who was Vice President & General Manager of Noranda. Stovel (1911-) was Assistant General Manager of Noranda. Perry was President of Teck-Hughes and represented two other subscribers: Lamaque Mining Co. and Crowpat Minerals Ltd. (these companies sold their shares in 1961).



With EMDEN's participation, Kettel and Almazan became very involved in the fluorspar project. The latter moved to Mexico to take charge of the operation as Managing Director in 1957. They were both completely bilingual, were competent mining engineers, and their ability to fly a light airplane made them mobile between El Limon and San Luis Potosi.



**CARLOS ALMAZAN**

### **The Fluorspar Operation**

The mine had a single shaft and two underground levels at 50 and 70 meters. In 1959 it shipped for export some 60,000 tons of screened and sized metallurgical fluorspar. Underground diamond drilling intersected a further orebody and the mine began to look important. In 1962, it earned \$110,000 and shipped 96,000 tons of metallurgical fluorspar valued at \$20 U.S. per ton at Brownsville on the Mexican-U.S. border.

Waite Amulet's Canadian mines were exhausted by this time and its assets, including its interest in Empresa Fluorspar, were taken over by Noranda.

In mid-1964 the Las Cuevas mine developed its new high-grade orebody containing 1.75 million tons and there were good prospects for more ore below 120 meters. Production costs were \$7 U.S. per ton compared with a sales price of \$14 at the mine. A second 600 ft shaft was sunk to produce over 12,000 tons per month.

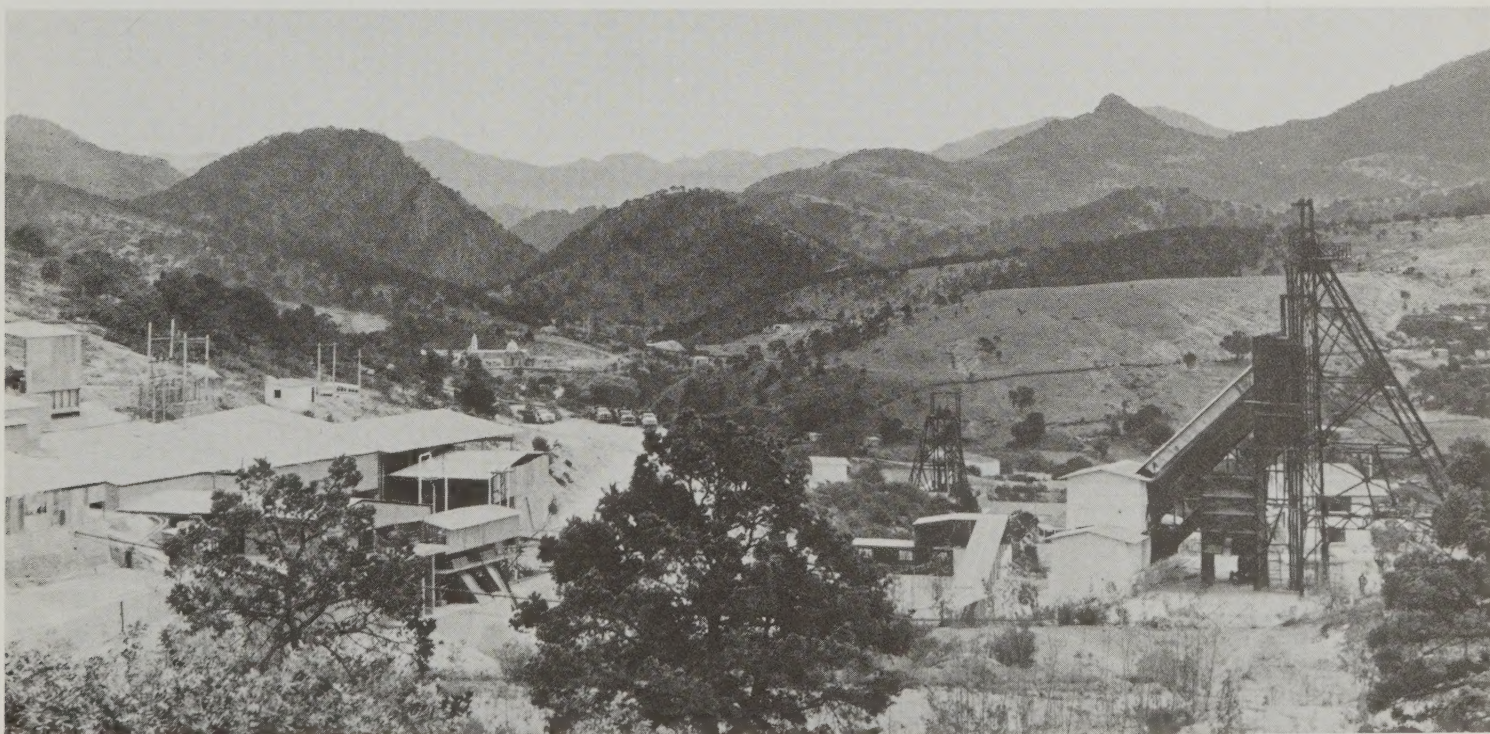
From a production revenue of \$1.7 million at the mine, a net profit of \$400,000 was made in 1965. In 1966 the net profit was \$351,000 and Las Cuevas paid its first dividend of \$136,000 to Empresa Fluorspar.

### **Mexican Control**

Earnings in 1967 were \$547,000 from revenue of \$2 million. In 1968 earnings increased to \$1.11 million after taxes of \$835,000. Fluorspar sales in 1969 amounted to 347,000 tons which yielded a profit of \$583,000 and dividends of \$1,091,000 were paid.

The Mexican government proposed severe tax penalties against all foreign-controlled corporations. Therefore, consideration was given to Empresa Fluorspar selling 51% of its shares of Las Cuevas to Mexican nationals. To prepare for this program, Noranda proceeded to purchase additional shares of the Canadian company and acquired almost complete control.

Noranda's subsidiary, Canada Wire & Cable Co. Ltd., had in 1963 acquired a substantial minority interest in Conductores Monterrey, S.A. which expanded and became one of the principal wire & cable companies in Mexico. This was controlled by the highly respected Garza family in Monterrey and they were approached by Alfred Powis, the President of Noranda, about participating in the Las Cuevas project. By 1969, two members of the family, together with other Mexican nationals, had purchased 51% of the shares of Las Cuevas.



**LAS CUEVAS — 1977**



In 1970 Las Cuevas paid \$1.11 million in dividends. The Mexican buyers of the 51% interest paid \$537,000 to Empresa Fluorspar against the purchase price of \$3.06 million.

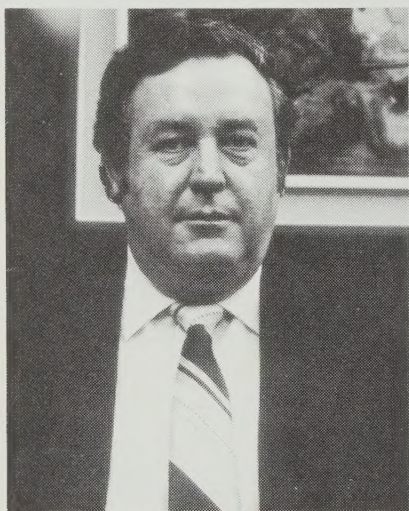
### Project Expansion and New Products

Tests were made on screened-out fine material to determine the economics of production of acid grade concentrate. As a result, a 50,000 ton flotation mill was built at San Luis Potosi in 1972 to convert fine and under-sized ore into plus 97%  $\text{CaF}_2$  acid grade concentrate for the chemical industry.

The metallurgical grade ore is trucked to the company's storage yard at San Luis Potosi where it is washed, screened, graded and loaded on railcars to Tampico or Brownsville, Texas. Some shipments to North American customers are made entirely by rail. Total shipments in 1972 amounted to 279,000 tons and dividends of \$3.4 million were paid. This enabled the Mexican shareholders to make their final payment for their stock. In 1973 shipments totalled 301,000 tons of metallurgical grade. Net earnings fell to \$1.1 million from the high earnings of 1972. Sales in 1974 reached a record of 375,000 tons including 80,000 tons of acid grade concentrate. Net earnings fell off to \$900,000. Shipments in 1975 totalled only 319,000 tons but the earnings were the same as in 1974. Shipments of ore fell off to 126,000 tons in 1976, reflecting lower steel production, and sales of concentrate only amounted to 68,000 tons. This trend continued and resulted in a slight loss in 1977.

In 1978, Las Cuevas earned \$3.26 million from 158,700 tons of metallurgical gravel plus 87,000 tons of concentrate. In 1979, 151,000 tons of metallurgical grade fluorspar for use in the steel industry plus 144,000 tons of concentrate were produced and sales increased to 166,000 and 192,000 tons respectively, worth some \$25 million U.S.

Noranda's direct interest in Empresa Fluorspar was increased to 98.9% through acquisition of the shares previously owned by Empresa Minera de El Setentrion, so its holding in Las Cuevas became 49%.



JORGE L. GARZA

The flotation mill was expanded to treat 150,000 tons. Ore reserves increased to 10 million tons, earnings were \$4.4 million and dividends in 1979 amounted to \$2.36 million. Further mill expansion will increase the capacity to 200,000 tons of acid and ceramic grade concentrate. The company has 700 employees, all Mexican citizens. Continued growth in 1980 will result in raising the mill feed to a rate of 340,000 tons per year.

Directors and Officers of Las Cuevas are:

Jorge L. Garza	— Chairman, Monterrey
Alfonso Garza	— Monterrey
Alejandro Cumming	— Mexico City
Fern C. Kettel	— late of Managua
Carlos Almazan	— Mexico City
Alfred Powis	— Toronto
William James	— Toronto
J. O. Hinds	— Toronto
Luis J. Creel, Jr.	— Secretary, Mexico City
Arturo Geyne	— General Manager
Alfonso Guerrero	— Administrative Manager
Jorge Gocher	— Comptroller

Noranda Sales Corporation Ltd., with its world-wide facilities, acts for Las Cuevas in regard to the sale of its products. The market for fluorspar is very competitive and demand varies with the international activity of the steel and chemical industries.

As a result of his study of the interesting geology of the Las Cuevas ore deposit, Almazan has developed the largest known reserves of metallurgical fluorspar extant in a single mine. Accordingly, this Mexican mining operation should continue for many years.

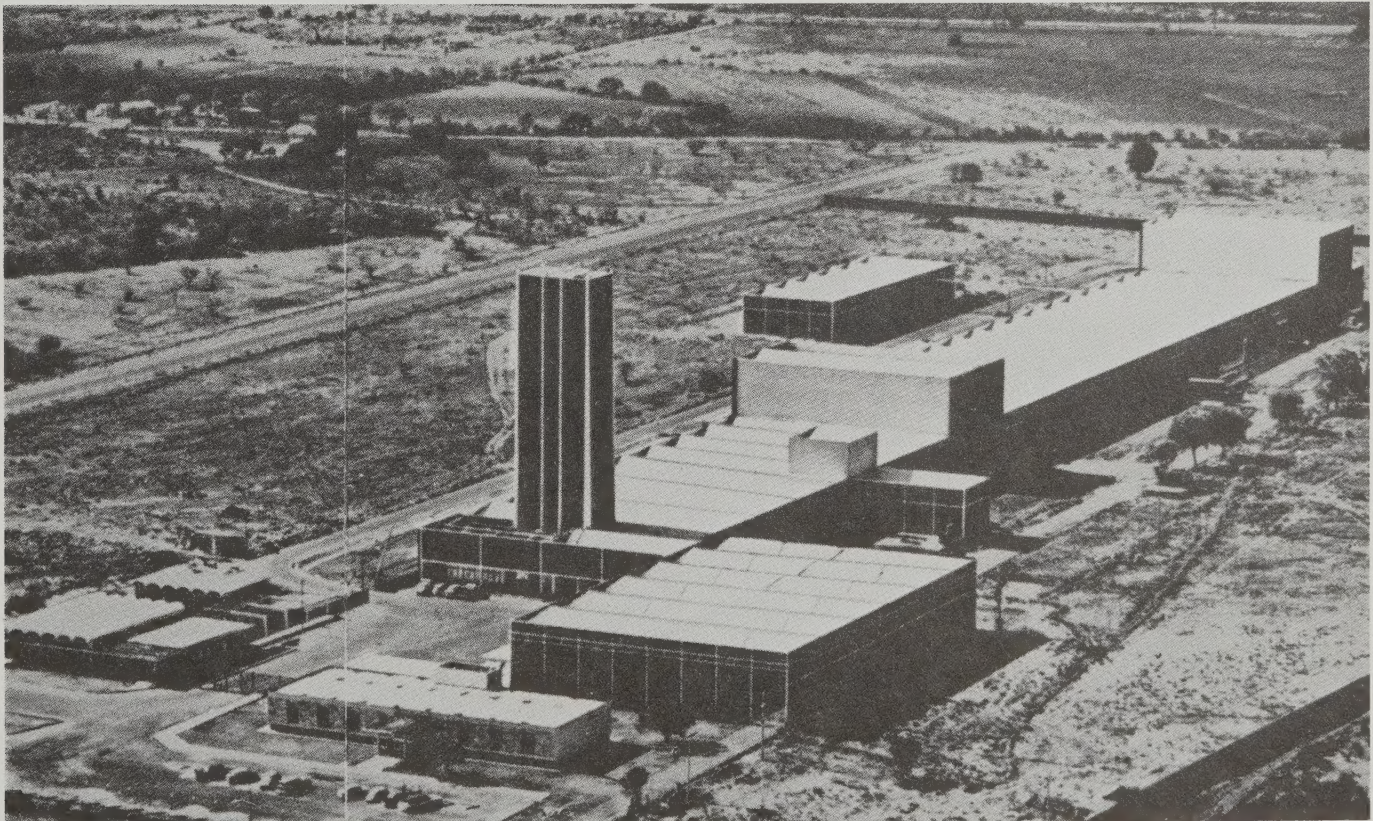
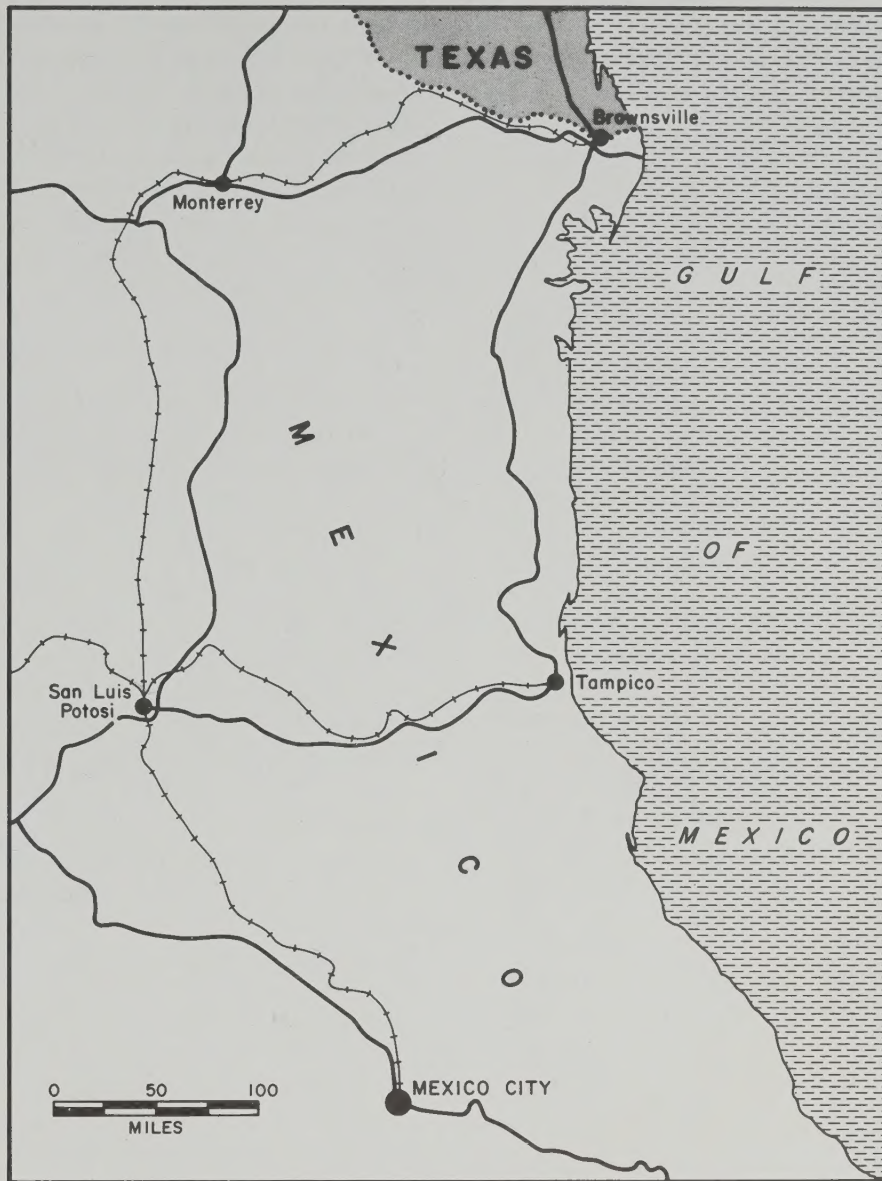
In this attempt to record the history of Noranda's three mining operations in NICARAGUA, CHILE and MEXICO, it has been necessary to comment on some political situations which affected the mines. These comments do not necessarily reflect the attitude or considered opinions of the Directors and Officers of the corporations.

L. J. Taylor of Noranda contributed by supplying material for these three historical articles.

### Footnote:

The Soviet and Marxist world-wide propaganda machine, with enlisted church activists, has for decades been blasting multinational corporations. Politicians in many developing countries long ago became very sensitive to this campaign. They are aware of the difficulty of developing trade, employment and new wealth in their country. Also, they may recognize that multinational corporations have the creativity, experience, technical ability and the finances necessary to set up local companies and train nationals, which would help such economic and social development. However, the propaganda against multinational companies makes the insecure politician very cautious about dealing or working with such companies lest they may lose political support.





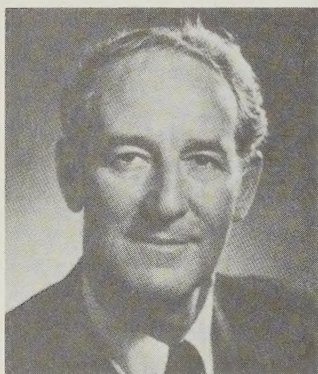
Condutores Monterrey — 1965.



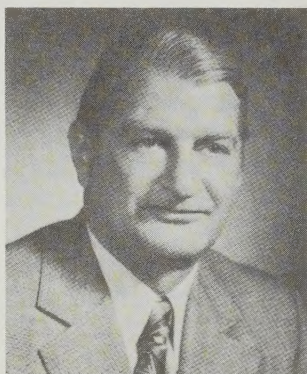
## NORANDA MANUFACTURING OPERATIONS IN LATIN AMERICA

Canada Wire and Cable Co., already mentioned on page 9 of this booklet, is the leading company in its field in Canada. It operates 11 plants and 7 warehouses in Canada and employs some 3,000 people. In 1979 it consumed some 80,000 tons of copper and grossed sales of over \$500 million Cdn.

Canada Wire and Cable (International) Ltd. has substantial minority interests in four Latin American operations. It has a 40.8% interest in Industrias Conductoras Monterrey, S.A., Mexico, referred to on page 9 and of which a photograph is shown on page 11. This facility at Monterrey has an area of 67,000 square meters and in addition, it has a plant at San Luis Potosi covering 25,000 square meters. This "C.M. Group" employs some 4,000 people and gross annual sales are about \$125 million U.S. It is the major wire and cable manufacturer in Mexico and also produces transformers, automotive and industrial electric components, etc. The population of Mexico in 1978 was 65.4 million and the GNP about \$84.1 billion U.S.



**J. H. Stevens**



**A. N. Fenn**

Canada Wire's first joint venture was formed in Bogota, Columbia in 1962, its partners being its agents, Srs. Jose Velez, Alvaro and Ricardo Velasquez, Luis Otero and a small manufacturer, Fabrica de Alambres Tecnicos (FADALTEC, Ltda.). A new 18,000 square meter plant was built employing 350 people. FADALTEC also owns a 33% equity in a copper extrusion plant at Cali, Columbia. These facilities are valued at over \$3 million U.S., of which Canada Wire's equity is 48%. The population of Columbia in 1978 was 25.1 million and its GNP was \$21.7 billion U.S.

In 1962, another partnership was formed in Caracas, Venezuela with two talented young businessmen, Sr.



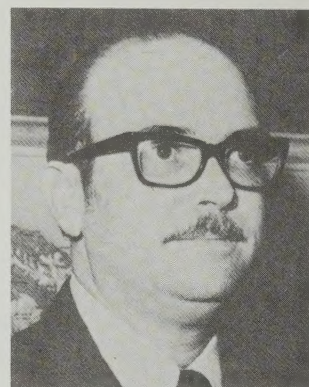
**E. Hergett — FADALTEC Director**

Jose Busquets and Sr. Alberto Parera who were keen to modernize their plant to produce a complete line of wire and cables. Today, Industrias de Conductores Electricos C.A. (ICONEL) has four large plants making high voltage electric cables, recovering copper and aluminum from scrap, extruding aluminum, brass and copper into shapes and tubes. Iconel has become a major Venezuelan industry, with facilities totalling 70,000 square meters and employing some 750 people. Canada Wire's 47.5% equity is currently valued at about \$10 million U.S. The population of Venezuela in 1978 was 13.9 million and its GNP was \$40.7 billion U.S.



**J. Busquets  
VP & Managing Director,  
ICONEL**

In 1964, a 26½% interest was acquired in Alambres Dominicanos C. por A. (ALDOCA). It started with building wire and cords then produced insulated cable and magnet wire. Its market was limited to the island of Hispaniola which it shares with Haiti. However, it expanded into diversified products such as plastic pipe and bags for coffee and sugar, also into steel wire, galvanized steel siding and light steel shapes. Its two plants cover 8,000 square meters and employ about 100 people. The population of the Dominican Republic is 5.1 million and its GNP \$4.6 billion U.S.



**E. de Castro S.  
President & Managing Director,  
ALDOCA**

J. Hugh Stevens, Chairman and Chief Executive Officer of Canada Wire and Cable Ltd., was the initiator of these affiliations in Latin America. A. N. 'Tony' Fenn, the President of Canada Wire and Cable (International) Ltd., is responsible for Canada Wire's interests in these four partnerships, as well as other joint venture operations in New Zealand, Australia and Africa.